



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

GP/2877.
#2
BT
01-29-02

Applicant: Joshua B. Paul et al.

PATENT APPLICATION

Serial No.: 09/976,549

Group Art Unit: 2877

Filed: October 12, 2001

Examiner:

For: ABSORPTION SPECTROSCOPY INSTRUMENT WITH
OFF-AXIS LIGHT INSERTION INTO CAVITY

Information Disclosure Statement

RECEIVED
JAN 18 2002
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Hon. Assistant Commissioner
for Patents
Washington, D.C. 20231

Sir:

The following information is submitted in
compliance with Applicants' duty of disclosure under 37
CFR § 1.56. A copy of each reference is enclosed.

U.S. Patents

<u>Pat. No.</u>	<u>Patentee</u>	<u>Grant Date</u>
4,793,709	Jabr et al.	12/27/88
5,528,040	Lehmann	06/18/96
5,912,740	Zare et al.	06/15/99

Other References

D.A. Jackson, "The Spherical Fabry-Perot
Interferometer as an Instrument of High Resolving Power
for use with External or with Internal Atomic Beams",
Proceedings of Royal Society, London, Ser. A., 1961, Vol.
263, pp. 289-308.

J.J. Scherer et al., "Cavity Ringdown Laser Absorption Spectroscopy: History, Development, and Application to Pulsed Molecular Beams", *Chemical Reviews*, 1997, Vol. 97, No. 1, pp. 25-51.

D. Ramanini et al., "Diode Laser Cavity Ring Down Spectroscopy", *Chemical Physics Letters*, 1997, Vol. 270, No. 5-6, pp. 538-545.

J. Ye et al., "Ultrasensitive Detections in Atomic and Molecular Physics: Demonstration in Molecular Overtone Spectroscopy", *J. Opt. Soc. Am. B.*, Vol. 15, No. 1, 1998, pp. 6-15.

B.A. Paldus et al., "Cavity-Locked Ring-Down Spectroscopy", *Journal of Applied Physics*, 1998, Vol. 83, No. 8, pp. 3991-3997.

A. O'Keefe et al., "Cavity Ring-Down Optical Spectrometer for Absorption Measurements Using Pulsed Laser Sources", *Review of Scientific Instruments*, 1988, Vol. 59, No. 12, pp. 2544-2551.

D.Z. Anderson et al., "Mirror Reflectometer Based on Optical Cavity Decay Time", *Applied Optics*, 1984, Vol. 23, No. 8, pp. 1238-1245.

A. O'Keefe et al., "CW Integrated Cavity Output Spectroscopy", *Chemical Physics Letters*, 1999, Vol. 307 (5-6), pp. 343-349.

D. Herriott et al., "Off-Axis Paths in Spherical Mirror Interferometers", *Applied Optics*, 1964, Vol. 3, No. 4, pp. 523-526.

D. R. Herriott et al., "Folded Optical Delay Lines", *Applied Optics*, 1965, Vol. 4, No. 8, pp. 883-889.

K. K. Lehmann et al., "The Superposition Principle and Cavity Ring-Down Spectroscopy", *J. Chem. Phys.* 1996, Vol. 105, No. 23, pp. 10263-10277.

G. Meijer et al., "Coherent Cavity Ring Down Spectroscopy", *Chemical Physics Letters*, 1994, Vol. 217, No. 1,2, pp. 112-116.

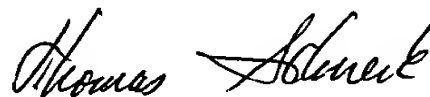
CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Asst. Commissioner for Patents, Washington, D.C. 20231

Signed: *Sally Azevedo*
Typed Name: Sally Azevedo

Date: December 31, 2001

Respectfully submitted,




Thomas Schneck

Reg. No. 24,518


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FORM PTO-1449					Atty. Docket No. LGR-002		Serial No. 09/976,549	
LIST OF PRIOR ART CITED BY APPLICANT				Applicant: Joshua B. Paul et al.				
				Filing Date: October 12, 2001		Group: 2877		
U.S. PATENT DOCUMENTS								
Examiner Initial*	Document Number	Grant Date	Name			Class	Sub Class	Filing Date
	DA							
	DB							
	DC							
	DD							
	DE							
	DF							
	DG							
	DH							
	DI							
	DJ							
FOREIGN PATENT DOCUMENTS								
Examiner Initial*	Document Number	Grant Date	Country		Class	Sub Class	Translation Yes No	
	DK							
	DL							
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)								
	DM	~ D. R. Herriott et al., "Folded Optical Delay Lines", <i>Applied Optics</i> , 1965, Vol. 4, No. 8, pp. 883-889.						
	DN	~ K. K. Lehmann et al., "The Superposition Principle and Cavity Ring-Down Spectroscopy", <i>J. Chem. Phys.</i> 1996, Vol. 105, No. 23, pp. 10263-10277.						
	DO	~ G. Meijer et al., "Coherent Cavity Ring Down Spectroscopy", <i>Chemical Physics Letters</i> , 1994, Vol. 217, No. 1,2, pp. 112-116.						
EXAMINER:					DATE CONSIDERED:			
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AA	4,793,709	12/27/88	Jabr et al.	356	445	
AB	5,528,040	06/18/96	Lehmann	250	343	
AC	5,912,740	06/15/99	Zare et al.	356	437	
AD						
AE						
AF						
AG						
AH						
AI						
AJ						

FOREIGN PATENT DOCUMENTS


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AK						
AL						


OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

AM	D.A. Jackson, "The Spherical Fabry-Perot Interferometer as an Instrument of High Resolving Power for use with External or with Internal Atomic Beams", <i>Proc. of Royal Soc., London, Ser. A.</i> , 1961, Vol. 263, pp. 289-308.
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BN	B.A. Paldus et al., "Cavity-Locked Ring-Down Spectroscopy", <i>Journal of Applied Physics</i> , 1998, Vol. 83, No. 8, pp. 3991-3997.					
BO	A. O'Keefe et al., "Cavity Ring-Down Optical Spectrometer for Absorption Measurements Using Pulsed Laser Sources", <i>Review of Scientific Instruments</i> , 1988, Vol. 59, No. 12, pp. 2544-2551.					
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